

CLAIMS

1. A method of providing location data about a mobile entity, wherein the location data is provided in encrypted form by a location server to a recipient that is one of the mobile entity or a service system usable by the mobile entity, the location data being encrypted such that it can only be decrypted using a secret available to a decryption entity that is not under the control of the recipient, whereby involvement of the decryption entity is necessary to decrypt the location data.
2. A method according to claim 1, wherein the encrypted location data is decrypted by the decryption entity with explicit or implicit authorisation by the mobile entity.
3. A method according to claim 1, wherein the recipient is the mobile entity and the decryption entity is under the control of the location server or an agent of the latter.
4. A method according to claim 2, wherein the recipient is the mobile entity and the decryption entity is under the control of the location server or an agent of the latter.
5. A method according to claim 4, wherein mobile entity passes the encrypted location data to a service system in association with a service request to the latter, the service system then passing the encrypted location data to the decryption entity for decryption and return
6. A method according to claim 5, wherein the encrypted location data includes the identity of the mobile entity to which the location data relates, the mobile entity passing the service system authenticatable identity data concerning itself and the service system, and the service system passing the identity data to the decryption entity which authenticates the identity data and only returns the decrypted location data to the service system if both:
- the mobile entity indicated by the identity data is the same as the one to which the location data relates, and

- service system indicated by the identity data is the same as the one asking the decryption entity to decrypt the location data.

7. A method according to claim 4, wherein mobile entity passes the encrypted location data to the decryption entity for decryption and return.

8. A method according to claim 1, wherein the recipient is the mobile entity and the decryption entity is a service system to which the mobile entity passes the encrypted location data in association with a service request.

9. A method according to claim 2, wherein the recipient is the mobile entity and the decryption entity is a service system to which the mobile entity passes the encrypted location data in association with a service request.

10. A method according to claim 1, wherein the recipient is the service system and the decryption entity is under the control of the location server or an agent of the latter.

11. A method according to claim 2, wherein the recipient is the service system and the decryption entity is under the control of the location server or an agent of the latter.

12. A method according to claim 11, wherein the service system passes the encrypted location data to the decryption entity for decryption and return, upon receipt of an authoring service request from the mobile entity.

13. A method according to claim 12, wherein the encrypted location data includes the identity of the mobile entity to which the location data relates, the mobile entity passing the service system authenticatable identity data concerning itself and the service system, and the service system passing the identity data to the decryption entity which authenticates the identity data and only returns the decrypted location data to the service system if both:

- the mobile entity indicated by the identity data is the same as the one to which the location data relates, and

- service system indicated by the identity data is the same as the one asking the decryption entity to decrypt the location data.

14. A method according to claim 11, wherein the mobile entity obtains the encrypted
5 location data from the service system and passes it to the decryption entity for decryption and return.

15. A method according to claim 14, wherein the encrypted location data includes the
identity of the mobile entity to which the location data relates, the mobile entity passing the
10 decryption entity authenticatable identity data concerning itself, and the decryption entity
authenticating the identity data and only returning the decrypted location data to the service
system if the mobile entity indicated by the identity data is the same as the one to which
the location data relates.

15 16. A method according to claim 11, wherein the service system is a location-data archive
system.

17. A method according to claim 1, wherein the recipient is the service system and the
decrypting entity is the mobile entity, the latter having received the encrypted location data
20 from the service system.

18. A method according to claim 1, wherein the recipient is the service system and the
decrypting entity is the mobile entity, the latter having received the encrypted location data
from the service system.

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19. A method according to claim 1, wherein involvement of the decryption entity to
decrypt the location data results in the generation of a billing record.

20. A method according to claim 2, wherein involvement of the decryption entity to
30 decrypt the location data results in the generation of a billing record.

21. A method according to claim 1, wherein the encrypted location data is passed to the decryption entity for decryption and the mobile entity sends the decryption entity, either directly or via the service system, quality of service data, QoS data, indicating a desired location accuracy, the decryption entity returning the decrypted location of the mobile entity to an accuracy determined by the QoS data.

22. A method according to claim 21, wherein the mobile entity digitally signs the QoS data, and the decryption entity checks the authenticity of the QoS data on the basis of the mobile entity's digital signature.

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23. A method of providing location data about a mobile entity from a location server to a service system, wherein:

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- (a) in response to a request for location data about the mobile entity, the location server obtains the data, encrypts it in such a way that it can only be decrypted using a secret known to a decryption entity associated with the location server, and sends out the encrypted location data;
 - (b) the service system receives the encrypted location data and sends it to the decryption entity for decryption and return.